UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
TANG, KUO LIANG J

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 April 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16 and 20-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16, 20-28</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>*3/31/04, 6/3/04*</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action is in response to the amendment filed on 04/07/2004.

The priority date for this application is 10/05/2000.

Claims 1-16 and 20-28 (new added) are pending and have been examined.

Claims 1-5, 15-16 and 20 remain rejected under 35 U.S.C. 102(b) as being

anticipated by Guccione, "Portable Native Methods in Java".

Claims 6-9 and 21-24 remain rejected under 35 U.S.C. 103(a) as being

unpatentable over Guccione in view of Yates et al. US Patent No. 6,091,897 (hereinafter

Yates).

Claims 10-14 and 25-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Guccione in view of Weiss, "Introduction to Native Calls".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claim 20 recites the limitation "said processor" in line 4. There is insufficient

antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-5, 15-16 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated

by Guccione, "Portable Native Methods in Java".

As Per Claim 1, Applicant's admitted prior art discloses the method that covering

the steps of:

"(i) a processor core operable to execute native instructions (E.g. C code) of a

native instruction set;"

"(ii) an instruction translator (E.g. see page 3, Figure 1, "Stubs DLL" and

associated text) operable to interpret non-native instructions (E.g. Java code) of a non-

native instruction set into native instructions (E.g. C code) for execution by said

processor core;"

"(iii) said instruction translator (E.g. see page 3, Figure 1, "Stubs DLL", Figure 2,

4-5 and associated text, e.g. mix of C and java codes) is responsive to a return to non-

native instruction (E.g. see page 5, Figure 5 and associated text) of said non-native

instruction set to return processing to a non-native instruction (E.g. Java code);" and

"(iv) said instruction translator is responsive to a return to native instruction (E.g.

C code) of said non-native instruction set to return processing to a native instruction (E.g.

C code)."

Although Guccione only shows teaching of translator that is responsive to a return

to non-native instruction (E.g. Java code) to return processing to a non-native instruction

(E.g. Java code) using stubs (E.g. C and Java code). The Stubs is created for both

directions so the native instruction and non-native instruction can exchange some

information. Therefore, the opposite direction (translator is responsive to a return to native instruction of said non-native instruction set to return processing to a native instruction) must be disclosed otherwise the stubs would not work at all.

As per Claims 2, the rejection of claim 1 is incorporated and further Guccione teaches:

"said instruction translator is a hardware based instruction translator." (E.g., see page 3, line 1, "The examples below were developed on an IBM-PC compatible machine running Microsoft Windows NT/4.0.").

As per Claims 3, the rejection of claim 1 is incorporated and further Guccione teaches:

"said instruction translator is a software based interpreter." (E.g. see page 4, line 7, "Sun Java 1.0 interpreter").

As per Claims 4, the rejection of claim 1 is incorporated and further Guccione teaches:

"said instruction translator is a combination of a hardware based instruction translator and a software based interpreter." (Again, see as noted above of Claims 2-3).

As per Claims 5, the rejection of claim 1 is incorporated and further Guccione teaches:

"said non-native instructions are Java Virtual Machine instructions." (E.g. see page 1, ABSTRACT).

As Per Claim 15, is the method claim corresponding to the apparatus claim 1 and is rejected under the same reason set forth in connection of the rejection of claim 1.

As Per Claim 16, is the computer program product claim corresponding to the apparatus claim 15 and is rejected under the same reason set forth in connection of the rejection of claim 15.

As per Claims 20, Guccione teaches:

"processing means for executing native instructions (E.g. C code) of a native instruction set;"

"translator means for interpreting non-native instructions (E.g. Java code) of a non-native instruction set into native instructions (E.g. C code) for execution by said processor core being responsive to a return to non-native instruction (E.g. see page 5, Figure 5 and associated text) of said non-native instruction set to return processing to a non-native instruction (E.g. Java code), and responsive to a return to native instruction (E.g. C code) of said non-native instruction set to return processing to a native instruction (E.g. C code)."

Although Guccione only shows teaching of translator that is responsive to a return to non-native instruction (E.g. Java code) to return processing to a non-native instruction (E.g. Java code) using stubs (E.g. C and Java code). The Stubs is created for both

directions so the native instruction and non-native instruction can exchange some information. Therefore, the opposite direction (translator is responsive to a return to native instruction of said non-native instruction set to return processing to a native instruction) must be disclosed otherwise the stubs would not work at all.

3.   Claims 6-9 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guccione in view of Yates et al. US Patent No. 6,091,897 (hereinafter Yates).

As Per Claim 6, the rejection of claim 1 is incorporated and further Guccione doesn't explicitly disclose a non-native veneer subroutine. However, Yates teaches "a non-native subroutine is called from native code via a non-native veneer subroutine, such that, upon completion of said non-native subroutine, a return to non-native instruction can be used to return processing to said non-native veneer subroutine with a return to native instruction within said non-native veneer subroutine serving to return processing to said native code" (E.g., see col. 33:18-36; "translated" is native, "not translated" is non-native). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yates into the system of Guccione, to use a non-native veneer subroutine. The modification would have been obvious because one of ordinary skill in the art would have been motivated to invoke a subroutine call to an appropriate native subroutine when said instruction fetch is for a complex non-native instruction.

As Per Claim 7, the rejection of claim 6 is incorporated and further Guccione doesn't explicitly disclose non-native subroutine is also called from non-native code. However, Yates teaches "non-native subroutine is also called from non-native code." (E.g., see col. 33:18-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yates into the system of Guccione, to use non-native subroutine called from non-native code. The modification would have been obvious because one of ordinary skill in the art would have been motivated to invoke a type of subroutine with same type of code instructions set to keep the program code unique and portable.

As Per Claim 8, the rejection of claim 6 is incorporated and further Guccione doesn't explicitly disclose non-native veneer subroutine is dynamically created. However, Yates teaches "non-native veneer subroutine is dynamically created when said non-native subroutine is called from native code." (E.g., see col. 33:18-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yates into the system of Guccione, to use dynamically created non-native veneer subroutine. The modification would have been obvious because one of ordinary skill in the art would have been motivated to use translated routine calls another translated Routine.

As Per Claim 9, the rejection of claim 8 is incorporated and further Guccione doesn't explicitly disclose non-native veneer subroutine is created stored within a stack memory area used by native code operation. However, Yates teaches "non-native veneer

subroutine is created stored within a stack memory area used by native code operation."

(E.g., see col. 33:18-36). Therefore, it would have been obvious to one of ordinary skill

in the art at the time the invention was made to incorporate the teaching of Yates into the

system of Guccione, to use dynamically created non-native veneer subroutine. The

modification would have been obvious because one of ordinary skill in the art would

have been motivated to use translated routine calls another translated Routine.

As per Claims 21-24, the rejection of claim 1 is incorporated and is rejected under

the same reason set forth in connection of the rejection of claims 6-9.

4.   Claims 10-14 and 25-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Guccione in view of Weiss, "Introduction to Native Calls".

As Per Claim 10, the rejection of claim 1 is incorporated and further Guccione

doesn't explicitly disclose plurality of types of return. However, Weiss teaches "said

instruction translator is responsive to a plurality of types of return to non-native

instruction." (E.g., see pages 5-6, slides 13-18). Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was made to incorporate the

teaching of Weiss into the system of Guccione, to be responsive to a plurality of types of

return to non-native instruction. The modification would have been obvious because one

of ordinary skill in the art would have been motivated to create strings and arrays in the

stub when the native method has parameters, return types, exceptions.

As Per Claim 11, the rejection of claim 10 is incorporated and further Guccione doesn't explicitly disclose said plurality of types of return to non-native instruction are operable to return with respective different types of return value. However, Weiss teaches "said plurality of types of return to non-native instruction are operable to return with respective different types of return value." (E.g., see pages 5-6, slides 13-18). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Weiss into the system of Guccione, to operable to return with respective different types of return value. The modification would have been obvious because one of ordinary skill in the art would have been motivated to create strings and arrays in the stub when the native method has parameters, return types, exceptions.

As per Claims 12, the rejection of claim 11 is incorporated and further the combination of Guccione and Weiss teaches:

"said plurality of different types of return value include one of: a 32-bit integer return value ..." (E.g., see Weiss, page 5, slide 13).

As Per Claim 13, the rejection of claim 1 is incorporated and further Guccione doesn't explicitly disclose plurality of types of return. However, Weiss teaches "said instruction translator is responsive to a plurality of types of return to native instruction." (E.g., see page 9, slide 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Weiss into the system of Guccione, to be responsive to a plurality of types of return to native instruction.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to create strings and arrays in the stub when the native method has parameters, return types, exceptions.

As Per Claim 14, the rejection of claim 13 is incorporated and further Guccione doesn't explicitly disclose said plurality of types of return to native instruction are operable to return with respective different types of return value. However, Weiss teaches "said plurality of types of return to native instruction are operable to return with respective different types of return value." (E.g., see page 9, slide 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Weiss into the system of Guccione, to operable to return with respective different types of return value. The modification would have been obvious because one of ordinary skill in the art would have been motivated to create strings and arrays in the stub when the native method has parameters, return types, exceptions.

As per Claims 25-28, the rejection of claim 20 is incorporated and is rejected under the same reason set forth in connection of the rejection of claims 10-11, 13-14.

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang J Tang whose telephone number is 703-305-4866. The examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 703-305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kuo-Liang J. Tang

Software Engineer Patent Examiner

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